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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,330	10/17/2000	Hironori Kikkawa	NEC 00FN054	3479

7590

03/27/2002

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EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 03/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/690,330

Applicant(s)

KIKKAWA ET AL.

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 ~~is~~ are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 ~~is~~ are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 does not point out a proper location of the uneven insulation film with respect to the transparent insulation substrate and the liquid crystal as shown in Figs. 15-18.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizobata et al. (USPN 5,724,111) in view of Kadota et al. (USPN 5,943,107).

As shown in Fig. 1, Mizobata discloses a reflection-type color liquid crystal display (LCD) apparatus comprising: a substrate 1 on which a liquid crystal driving element is formed; an opposite substrate 2 which is opposite to the driving element formation substrate 1; a liquid crystal 10 sandwiched between said driving element formation substrate and said opposite substrate; and light scattering mechanism provided on the liquid crystal side surface of the opposite substrate which is formed of a transparent insulation glass plate and has an inner surface abraded with abrasive

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powder and further etched with a hydrofluoric acid so as to have a uneven portions (col. 3, lines 16-20). The light scattering mechanism comprises the uneven portions and a flattened film formed to cover those uneven portions. Thus, Mizobata discloses all aspects of the instant invention except that a color filter is formed on the opposite substrate. Kadota discloses a color LCD apparatus wherein a color filter 9 finely divided into segments 9R, 9G, and 9B and a black matrix 8 are formed on a second insulation film 5 on the surface of a transparent insulating substrate 0 as shown in Fig. 1. Pixel electrode 1 is formed on a planarization film 10 which fills convexities presented by TFT and the color filter. The planarization film 10 protects the color filter against any damaging force which may be applied to the color filter in subsequent steps of the process for manufacturing the color display device (col. 4, lines 49-52). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the reflection-type color LCD apparatus of Mizobata with the teaching of Kadota by forming at least a color filter on the driving element formation substrate so as to avoid roughening of the color filter surfaces during the film formation and patterning for forming the pixel electrodes.

4. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizobata et al. (USPN 5,724,111) in view of Kadota et al. (USPN 5,943,107) as applied to claims 1-3 and 9-11 above, and further in view of Iwata Yukimitsu (Japanese Publication number 10-206604).

The reflection-type color LCD apparatus of Mizobata as modified in view of Kadoka above includes all that is recited in claims 4-8 except that the light scattering

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mechanism does not comprise a scattering auxiliary film formed on an uneven insulation film and having a refraction index different from the uneven insulation film. Yukimitsu discloses a laminated film in which an optical thin film layer 5 having a reflective index lower than that of a base material 2 that is transparent and flattened at its base, and has an uneven shape 6 on its surface (see Figure and Solution). Yukimitsu teaches that the laminated film is used for various display to prevent the reflection of light at its surface (see Abstract). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the reflection-type color LCD apparatus of Mizobata with the teaching of Yukimitsu by employing this laminated film as a light scattering mechanism to improve display visibility.


Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication should be directed to Thoi V. Duong at telephone number (703) 308-3171.

Thoi Duong

03/15/2002


William L. Sikes
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